LP™280/290

USER'S
GUIDE

InFocus®

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FCC Warning

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Safety Certifications

UL, CUL, TÜV, NOM, IRAM, GOST R

EN 55022 Warning

This is a Class A product. In a domestic environment it may cause radio interference, in which case the user may be required to take adequate measures.

Declaration of Conformity

Manufacturer: InFocus Corporation
27700B SW Parkway Ave. Wilsonville, Oregon 97070 USA
European Office: Olympia 1, NL-1213 NS Hilversum, The Netherlands

We declare under our sole responsibility that the LP280 and LP290 projectors conform to the following directives and norms:

EMC Directive 89/336/EEC, Amended by 93/68/EEC
EMC: EN 55022
EN 55024
EN 61000-3-2
EN 61000-3-3
Low Voltage Directive 73/23/EEC, Amended by 93/68/EEC
Safety: EN 60950: 1992 + A1 + A2 + A3 + A4: 1997

May, 2001

Australian Certification C-tick mark

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SAFETY INSTRUCTIONS

Please read and follow all safety instructions provided BEFORE using your new projector. Failure to comply with safety instructions may result in fire, electrical shock, or personal injury and may damage or impair protection provided by equipment. Please save all safety instructions.

Safety Definitions:

- **Warning:** Statements identify conditions or practices that could result in personal injury.
- **Caution:** Statements identify conditions or practices that could result in damage to your equipment.

Safety Symbols:

Attention: For information about usage of a feature, please refer to the User's Guide.

Warning: Hot surface. Do not touch.

An arrow pointing to the lamp door on the projector.

Safety Terms:

- **Warning:** Don't look directly into the lens when the projector is turned on.

•**Warning:** To replace the lamp, turn the projector off and unplug the power cord. To avoid burns, wait 60 minutes before opening the lamp door. Follow all instructions provided in this User's Guide.

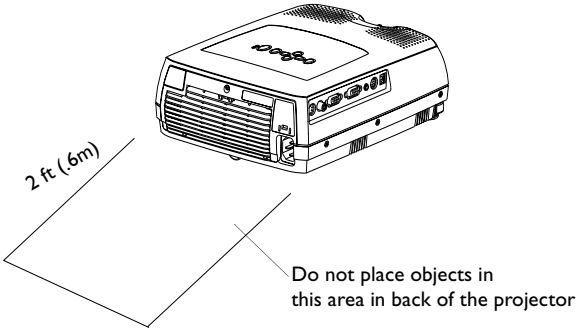
•**Warning:** Please use the power cord provided. Connect the power cord to a receptacle with a protective safety (earth) ground terminal.

- **Warning:** Refer all service to qualified service personnel. Servicing your own projector will void the warranty. See the following page for the customer service contact information.
- **Caution:** Don't block ventilation openings.

- **Caution:** Don't set liquids on the projector. Spilled liquids may damage your projector.
- **Caution:** Don't place the projector on a hot surface or in direct sunlight.
- **Caution:** Do not drop the projector. Transport the projector in an InFocus-approved case; see page 41 for a list of cases.

Important Operating Considerations

Do not place the projector on a tablecloth or other soft covering that may block the vents. In the unlikely event of the bulb rupturing, thoroughly clean the area in back of the projector and discard any edible items placed in that area.



Customer Service

If you need assistance, call InFocus Customer Service directly at **1-800-799-9911**. Support is free between 6 a.m. and 6 p.m. PST, Monday through Friday. Support is available in North America after hours and weekends for a fee at 1-888-592-6800.

Or, send us an e-mail at **techsupport@infocus.com**.

In Europe, call InFocus in The Netherlands at **(31) 35-6474010**.

In Asia, call InFocus in Singapore at **(65) 353-9449**.

INTRODUCTION

The InFocus® LP280™ and LP290™ multimedia projectors are specifically designed for multipurpose use. They are easy to connect, easy to use, easy to transport, and easy to maintain. The LP280 has native SVGA 800x600 resolution, the LP290 has XGA 1024x768 resolution. The user interfaces of the two products are identical; information in this user's guide applies to both products.

Image Resolution

LP280

The SVGA resolution of the LP280's projected image is 800x600. The projector is compatible with screen resolutions up to 1280x1024. If your computer's screen resolution is higher than 1280x1024, reset it to a lower resolution before you connect the projector.

NOTE: *The LP280 automatically expands 640x480 images to 800x600.*

LP290

The XGA resolution of the LP290's projected image is 1024x768. The projector is compatible with screen resolutions up to 1280x1024. If your computer's screen resolution is higher than 1280x1024, reset it to a lower resolution before you connect the projector.

NOTE: *The LP290 automatically expands 640x480 and 800x600 images to 1024x768.*

Compatibility

The projector is compatible with a wide variety of computers and video devices, including:

- IBM-compatible computers, including laptops, up to 1280x1024 resolution.
- Apple® Macintosh® and PowerBook® computers up to 1280x1024 resolution.
- Most standard VCRs, DVD players, camcorders and laser disc players.

Unpacking the Projector

The projector comes with the items shown in Figure 1. Check to make sure all are included. **Contact your InFocus dealer immediately if anything is missing**.

If you are experienced in setting up presentation systems, use the *Quick Start* card that was included in the shipping box. For complete details on connecting and operating the projector, refer to this User's Guide. Electronic versions of this user's guide in multiple languages are available on the included CD and on our website at www.infocus.com.

A registration card is included in the box. Register to receive product updates, announcements, and special offers from InFocus. Or, register online at www.infocus.com/service/register and you will be automatically entered to win free merchandise.

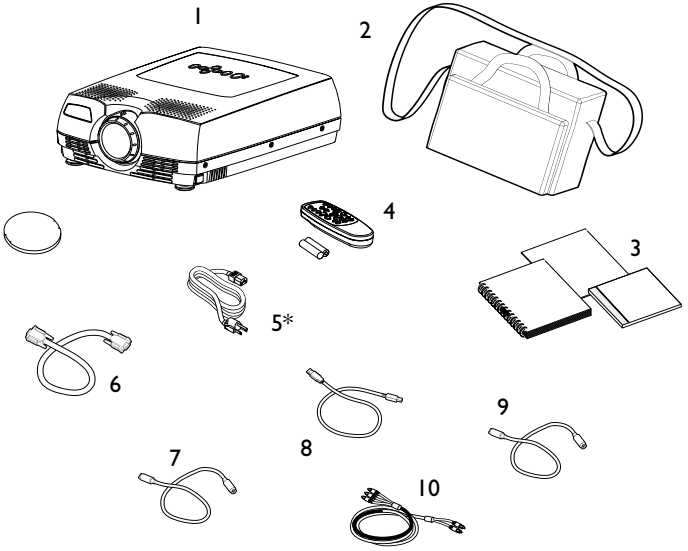


FIGURE 1

Shipping box contents

1. Projector + lens cap
2. Soft carry case
3. User's Guide, Quick Start card, and CD
4. Remote control
5. Power cord*
6. Computer cable
7. PS/2 mouse cable
8. USB mouse cable
9. S-Video cable
10. Audio/Video cable

*additional country-dependant power cords may be included

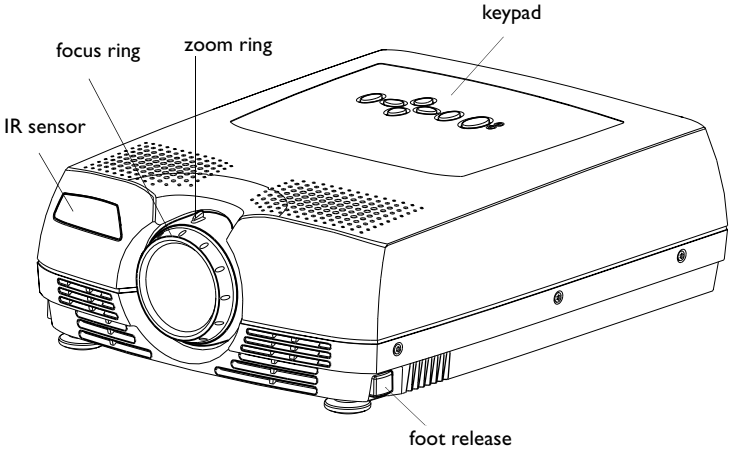


FIGURE 2

Front view of projector

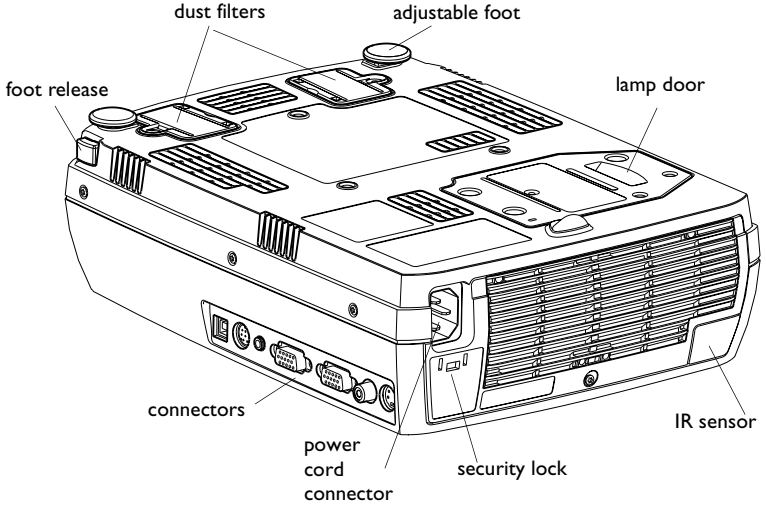


FIGURE 3

Rear view of projector

Usage Guidelines

- Do not look directly into the projection lens when the projector is turned on. The bright light may harm your eyes.
- Do not block the grills on the projector. Restricting the air flow can cause it to overheat and turn off. If this happens, you must wait a minute before attempting to turn it back on.
- Handle the projector as you would any product with glass components. Be especially careful not to drop it.
- Avoid leaving the projector in direct sunlight or extreme cold for extended periods of time. If this happens, allow it to reach room temperature before use.
- Transport the projector in a vendor-approved hard or soft case. Part numbers for these cases are listed on page 41.

If You Need Assistance

The first place to look for help is in this manual. Be sure to check the guidelines in "Troubleshooting" on page 34. Or, check the Service and Support section of our website at **http://www.infocus.com/service.** You'll find a Technical Library, FAQs, and support contacts including a technical support e-mail form.

If those sources don't answer your question, call your InFocus dealer. You can also call InFocus Customer Service directly at **1-800-799-9911**. Call between 6 a.m. and 6 p.m. PST, Monday through Friday. Service is available in North America after hours and on weekends for a fee at 1-888-592-6800.

In Europe, call InFocus in The Netherlands at **(31) 35-6474010**.
In Asia, call InFocus in Singapore at **(65) 353-9449**.

Or, send us an e-mail at **techsupport@infocus.com**

Our World Wide Web address is **http://www.infocus.com**.

Warranty

This product is backed by a limited two-year warranty. The details of the warranty are printed at the back of this manual. An extended warranty plan may be purchased from your InFocus dealer, any time during the original two year warranty period. Refer to page 41 for the part number.

When sending your projector in for repair, InFocus recommends shipping the unit in its original packing material, or having a professional packaging company pack the unit for shipping. Do not ship your projector in the enclosed soft case. Please insure your shipment for its full value.

SETTING UP THE PROJECTOR

1 Place the projector on a flat surface.

- The projector must be within 6 feet (1.8 m) of your power source and your computer.
- If you want to project from behind a translucent screen, set up the projector behind your screen. See "Rear" on page 25 to reverse the image.
- If you are installing the projector on the ceiling, refer to the installation guide that comes with the Ceiling Mount Kit for more information. To turn the image upside down, see "Ceiling" on page 25. The Ceiling Mount Kit is sold separately, see "Optional Accessories" on page 41.

2 Position the projector the desired distance from the screen.

- If the image is too big or too small, use the zoom ring to adjust the size or move the projector forward or backward. Figure 4 shows three projected image sizes. For more information about image size, see "Projected Image Size" on page 48.

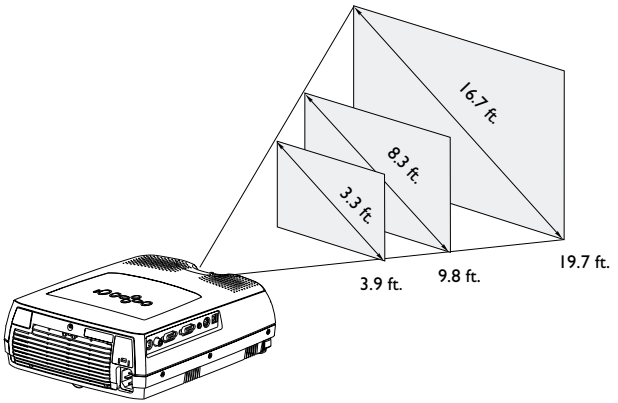


FIGURE 4

Projected image size at minimum zoom

NOTE: *The projector must be at least 3.6 feet (1 m) from the projection screen.*

3 Make sure the projector and the computer are turned off.

***NOTE**: Before you continue, make sure the projector and all other equipment is turned off. If you're connecting a computer, make sure the distance between it and the projector is 6 feet or less.*

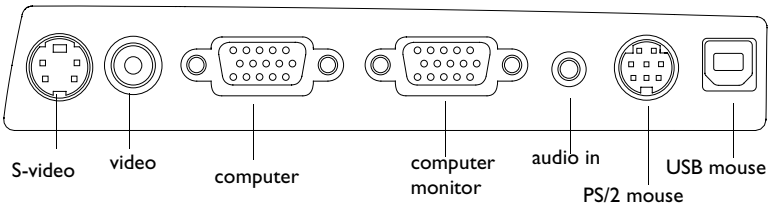


FIGURE 5

Connector panel

***NOTE:** If you are connecting an older Macintosh computer that does not have a 15-pin connector, you must use a Mac adaptor between the computer and the projector. See "Optional Accessories" on page 41.*

Connecting a Computer

1. Plug one end of the computer cable into the blue "Computer VGA" connector on the projector.
2. Plug the other end of the computer cable into the monitor connector on your computer. If you are using a desktop computer, you need to disconnect your monitor cable from your computer.

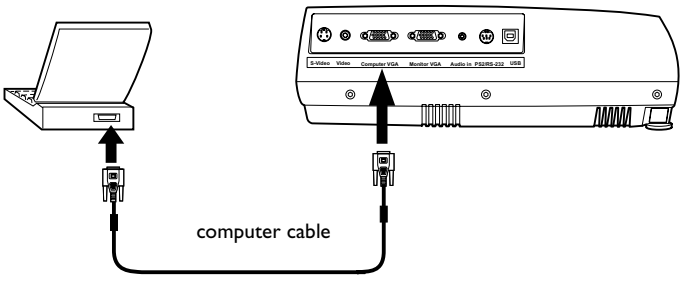


FIGURE 6

Connecting the projector to a computer

Do you want to play your computer's audio on the projector?

1. Plug either end of the audio cable (ordered separately) into the audio connector on your computer.
2. Plug the other end of the audio cable into the "Audio in" connector on the projector.

Do you want to display the image on your desktop computer's monitor as well as on the projection screen?

1. Plug the monitor's cable into the "Monitor VGA" connector on the projector.

NOTE: *Many laptop computers do not automatically turn on their external video port when a secondary display device such as a projector is connected. Refer to your computer manual for the command that activates the external video port. Activation commands for some laptop computers are listed in the Appendix of this manual on page 42 and in the Service section of our website.*

Do you want to control the computer's mouse from the projector's remote?
If your computer has a PS/2 connector, use the PS/2 mouse cable.

1. Plug the green end of the PS/2 mouse cable into the mouse connector on your computer.
2. Plug the black end of the PS/2 mouse cable into the "PS2/RS-232" connector on the projector.

If your computer has a USB connector and is running Windows 98, use the USB mouse cable.

NOTE: *The USB mouse is supported for use with Windows 98 or higher only.*

1. Plug the flat end of the USB mouse cable into the mouse connector on your computer.
2. Plug the square end of the USB mouse cable into the "USB" connector on the projector.

You must have the appropriate USB drivers installed on your computer to use the USB feature. Windows 98 ships with the appropriate drivers.

NOTE: *You do not need to restart your computer after connecting a USB mouse to use it (it is hot-pluggable). You must restart your computer after plugging in a PS-2 mouse.*

Now you're ready to power up the projector and your computer. Skip to "Powering up the Projector" on page 13.

Connecting a Video Player

If your video device (VCR, DVD player, video camera) uses a round, one-prong composite video connector, use the composite audio/video (A/V) cable provided. The end with 2 connectors attaches to the projector, the other end attaches to the video device.

- If your video device uses a round, four-prong S-video connector, use an S-video cable. S-video generates a higher quality image.

1 Plug the A/V cable's round yellow connector into the "video-out" connector on your video device (Figure 7). This connector may be labeled "To Monitor."

- If you're using an S-video cable, connect the round black connector to the "S-video out" connector on the video device.

2 Plug the other yellow connector into the "Video" connector on the projector.

- If you're using S-video, plug the other end of the cable into the "S-Video" connector on the projector.

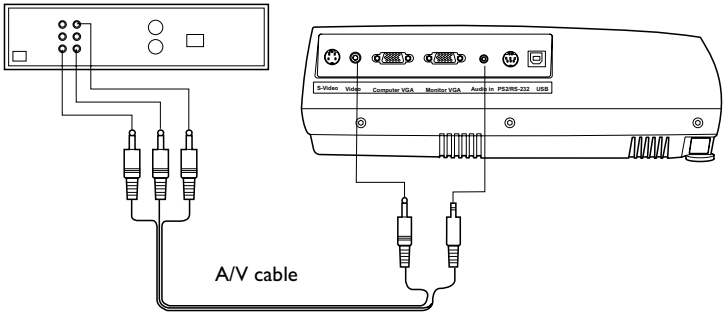


FIGURE 7

Connecting the projector to a VCR using the A/V cable

3 Plug the A/V cable's white connector into the left "audio out" connector on your video device. Plug the cable's red connector into the right "audio out" connector on the video device.

4 Plug the blue end of the A/V cable into the "Audio in" connector on the projector.

CAUTION: *Your video player may also have a "Video Out" connector for a coaxial cable connection. DO NOT use this to connect to the projector.*

The projector is compatible with these major broadcast video standards: NTSC, NTSC 4.43, PAL, PAL-M, PAL-N, PAL-60, and SECAM. It automatically adjusts to optimize its performance for the incoming video.

Powering up the Projector

1 Remove the lens cap.

2 Plug the power cord into the back of the projector, then plug it into your electrical outlet. A surge-protected power strip is recommended.

- The LED on the top of the projector (Figure 11 on page 18) lights orange after a few seconds.

3 After the LED lights orange, press the Power button on the projector's keypad or remote.

- The fans start to run, the LED on the top of the projector lights green, and the InFocus startup screen appears. It takes about one minute for the image to achieve full brightness.

4 If you connected a video player, turn it on.

- The video image should display on the projection screen. If it doesn't, press the **Source/Select** button on the keypad (page 18) or the **Video** button on the remote to display your video image.

5 If you connected a computer, turn it on.

- The computer image should display on the projection screen. If it doesn't, press the **Source/Select** button on the keypad or the **Computer** button on the remote to display your computer's image.
- Make sure your laptop's external video port is activated; see "Portable and Laptop Activation Chart" on page 42 for details.
- If necessary, make adjustments to the image using the projector's on-screen menus. To open the menus, press the **Menu** button on the keypad or remote. For more information about the menus, see page 21.

***NOTE**: Always use the power cord that shipped with the projector.*

***NOTE**: The first time you connect your computer to the projector, the computer may display a message stating that new hardware was found. The Add New Hardware Wizard may appear. Use the Wizard to load the correct driver (the computer considers the projector a Plug and Play Monitor).*

***NOTE**: With some computers, the order in which you power up the equipment is very important. Most computers should be turned on last, after all other peripherals have been turned on. Refer to your computer's documentation to determine the correct order.*

Turning Off the Projector

To turn off the projector, press the Power button. A dialog box appears, asking for confirmation. Press the Power button again to turn the lamp off. The fans continue to run for a minute, then the projector shuts off.

If you want to turn the lamp back on, you must allow 90 seconds for the lamp to cool. The lamp won't light if it's too hot.

NOTE: *To maximize lamp life, allow the projector to run for at least five minutes before turning it off.*

If you want to turn off the projector for a short period of time, press the **Power** button twice. This puts the projector in standby mode. The lamp goes out, and the fans run and the LED blinks orange for 1 minute. After 1 minute, the fans turn off and the LED lights solid orange. To exit standby mode and return to normal operation, press the **Power** button.

USING THE PROJECTOR

This section describes how to use and make adjustments to the projector. It also provides a reference to the keypad and remote buttons and the options available from the on-screen menus.

Basic Image Adjustment

1. Make sure you have powered up your equipment in the right order (page 13).
2. If the image doesn't display completely, zoom the image (page 15), adjust the height of the projector (page 16) or center the image by adjusting its horizontal or vertical position (page 24). Be sure the projector lens is at a 90 degree angle to the screen.
3. If the image is out of focus, rotate the focus ring (page 15).
4. If the colors don't look right, adjust the brightness, contrast, tint, or color (page 22).

Adjusting the Projector

To focus the image, rotate the focus ring (Figure 8) until the image is clear. To zoom the image, rotate the zoom ring. This adjusts the image size.

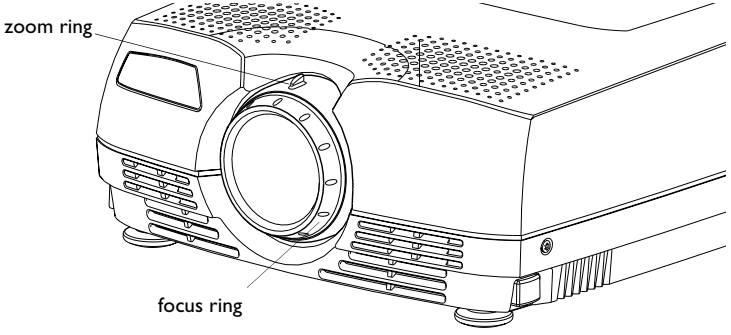


FIGURE 8

Focus ring and zoom ring

NOTE: *To obtain the best overall focus quality, open the menu and focus on the text. This will ensure that the best overall image quality is achieved.*

The projector is equipped with a self-locking, quick-release feet and buttons.

To raise the projector:

1. Raise the projector to the height you want, then press and hold the foot release buttons. Release the buttons to lock the feet into position (Figure 9).
2. If necessary, rotate the feet to adjust the angle of the projected image.

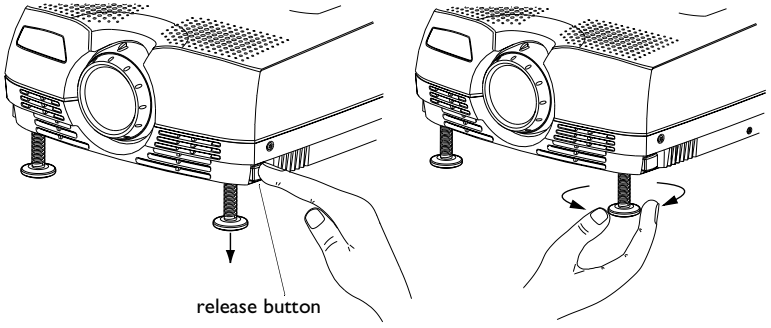


FIGURE 9

Adjusting the height of the projector

Using the Remote Control

To control the computer's mouse from the projector's remote, you must connect the USB or PS/2 mouse cables to the computer and the projector. See page 10 for details.

Point the remote control at the projection screen or at the front or rear of the projector (not at the computer). The range for optimum operation is about 40 feet. If you point the remote at the projection screen, the distance to the screen and back to the projector must be less than or equal to 40 feet. For best results, point the remote directly at the projector.

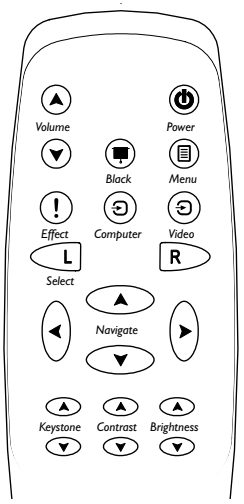


FIGURE 10

Remote control

Using the Keypad and Remote Buttons

While the menus are displayed, the **Keystone** and **Volume** buttons on the keypad and the arrow buttons on the remote act as menu navigation and adjustment buttons and the **Source/Select** button on the keypad and the **Select** button on the remote act as selection buttons. See "Using the On-Screen Menus" on page 21 for details.

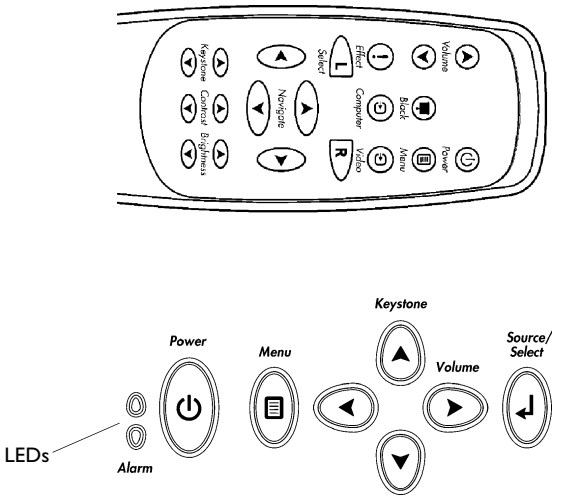


FIGURE 11

Keypad and remote buttons

Menu

Press the **Menu** button to open the on-screen menus. Press **Menu** again to close the menus. When you close the menus, the projector saves any changes you made. The menu automatically closes after 1 minute if no buttons are pressed. For more information about the on-screen menus, see page 21.

Source/Select (keypad only) or Computer and Video (remote only)

When you have more than one source (computer and video) connected to the projector, select between them by pressing the **Source/Select** button on the keypad or the **Computer** or **Video** button on the remote.

Power

Press this button to turn the projector on and off.

Volume
Press the Volume buttons to adjust the volume.

Arrow buttons
Use these buttons to navigate through and make adjustments to the on-screen menus. See "Using the On-Screen Menus" on page 21 for details.

Keystone
Use this feature to adjust the image vertically and make a squarer image.

1 Press the **Keystone up** arrow to reduce the upper part of the image, and press the **Keystone down** arrow to reduce the lower part. You can also adjust keystone from the Basic menu (see page 23 for details on the menu).

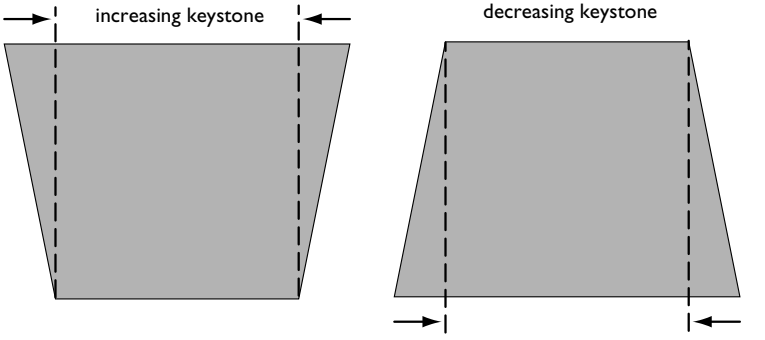


FIGURE 12
Adjusting the keystone

Black (remote only)
Press this button to display a black screen.

Effect (remote only)
Press this button to invoke the presentation effect. The default effect is magnify. You can select among freeze, black, mute, and 16:9. See page 26 for details.

To use the magnify effect, press Effect, then press the up or right arrow to magnify the image, press the down or left arrows to decrease the magnification. If you press Effect again, you can use the arrows to pan the image, displaying different parts of it (only if the image is magnified). To return to magnify mode, press the Select (or L) button. To return to the original size, press the Effect button twice.

Contrast (remote only)
Press the Contrast up and down arrows to adjust the contrast from 0-100.

Brightness (remote only)
Press the Brightness up and down arrows to adjust the Brightness from 0-100.

Using the On-Screen Menus

The projector has menus that allow you to make image adjustments and change a variety of settings.

To open the on-screen menus, press the **Menu** button on the keypad or remote. This displays the **Basic** menu and changes the **Keystone** and **Volume** buttons on the keypad to menu navigation buttons. Press the down arrow button to move the cursor down and press the up arrow button to move the cursor up. The selected menu is highlighted.

FIGURE 13

On-screen menu

To change a menu setting, use the up and down arrow buttons to move the cursor up and down to the item you want to change (the selected item is highlighted), then press the **Source/Select** button on the keypad or the **Select** button on the remote. Use the left and right arrows to adjust the setting, or use the up and down arrows and the **Select** button to turn a setting on or off. Press **Source/Select** when you are done.

To access a sub-menu, highlight it and press **Source/Select**. To navigate back to the previous menu, highlight the arrow at the top of the menu and press **Source/Select**.

Press the up and down arrows to move to another setting. When you have completed your adjustments, press **Menu** to close the menus.

NOTE: *Some menu items may be grayed out (dimmed) at certain times. This indicates the item is not applicable to your setup or the item is not enabled until another selection is made.*

Basic Menu

FIGURE 14

Basic menu

Contrast

The contrast controls the degree of difference between the lightest and darkest parts of the picture. Adjusting the contrast changes the amount of black and white in the image.

- Use the up and down arrows to highlight Contrast, press **Source/Select**, use the left and right arrows to adjust the contrast from 0 to 100 in the slider bar, then press **Source/Select** to accept your changes.

Brightness

Adjusting the brightness changes the intensity of the image.

- Use the up and down arrows to highlight Brightness, press **Source/Select**, use the left and right arrows to adjust the brightness from 0 to 100 in the slider bar, then press **Source/Select** to accept your changes.

NOTE: *The color setting applies to video sources only.*

Color

The color setting adjusts a video image from black and white to fully saturated color.

- Use the up and down arrows to highlight Color, press **Source/Select**, use the left and right arrows to adjust the color from 0 to 100 in the slider bar, then press **Source/Select** to accept your changes.

Keystone
This option helps to keep the image square as the angle of projection is changed. Use this feature to adjust the image vertically and make a squarer image. See page 19 for details on keystone adjustments.

- Press the down button to highlight Keystone, then press **Source/Select**. Use the left and right arrows to adjust the keystone setting from -63 to 63 in the slider bar. Press **Source/Select** to accept your changes.

Setup
See the following pages for details on this menu.

Reset
This resets the picutre settings like brightness and contrast.

About
This read-only menu provides information about the source, such as resolution and horizontal and vertical frequencies.

Setup menu

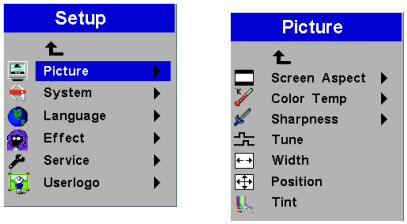


FIGURE 15

Setup and Picture menus

Picture menu

- **Screen Aspect**: The default is 4:3. Click 16:9 if you are watching videos in widescreen format. Highlight Screen Aspect, press **Source/Select**, use the up and down arrows to highlight your selection, press **Source/Select**, then press the left arrow to return to the Picture menu.
- **Color Temp**: The default is 7300. Choose a different value to adjust the amount of red in the image.
- **Sharpness**: Adjusts the sharpness of video images.
- **Tune**: Use the left and right arrows to adjust the horizontal phase and fine tuning of the image.
- **Width**: Use the left and right arrows to adjust the width of the image.
- **Position**: Use the left and right arrows to adjust the horizontal position of the image and use the up and down arrows to adjust the vertical position.
- **Tint:** Use the left and right arrows to adjust the tint of video images.

System menu

Turn the features in the System menu on and off by highlighting them and pressing **Source/Select**. A checkmark in the box indicates the feature is on; an empty box means the feature is off.

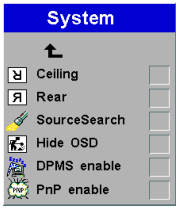


FIGURE 16

System menu

- **Ceiling**: This turns the image upside down for ceiling-mounted projection.
- **Rear**: This reverses the image so you can project from behind a translucent screen.
- **SourceSearch**: When this feature is on, the projector automatically searches for an active source. When it is off, you must press the **Source/Select** button on the keypad or the **Computer** or **Video** button on the remote to switch among sources.
- **Hide OSD**: This hides the on-screen display (OSD).
- **DPMS enable**: This turns the Display Power Management System (DPMS) on. When it is on, the projector turns the lamp off after 3 minutes of not detecting an active source. The projector will return to normal activity immediately if it detects an active source. After 5 additional minutes, the projector turns completely off. You must press the Power button to turn the projector back on. The LED blinks green when in DPMS mode.
- **PnP enable**: This turns the plug and play feature on and off. When it is On, most new computers will automatically recognize the projector, then set the monitor resolution and refresh rate accordingly. You need to set the Plug and Play setting to Off for the projector to display properly on some older computers.

Language menu

You can display the on-screen menus in English, German, Spanish, French, Italian, Dutch, Norwegian, Portuguese, Japanese, Chinese, or Simplified Chinese. Highlight the desired language, then press **Source/Select**. The menus redraw immediately.

FIGURE 17

Language menu

Effect menu

This menu allows you to assign a different effect to the Effect button on the remote. The default effect is magnify. Highlight an effect and press **Source/Select** to choose a different one.

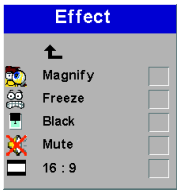


FIGURE 18

Effect menu

- **Magnify**: This allows you to enlarge and display different parts of the image. See page 20 for detail on magnify.
- **Freeze**: This freezes the projected image.
- **Black**: This masks the projected image with a black screen.
- **Mute**: This mutes the sound.
- **16:9**: This allows you to switch between 4:3 and 16:9 widescreen formats.

Service menu

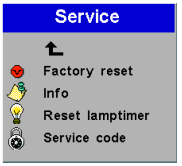


FIGURE 19

Service menu

- **Factory reset**: This resets all options to the original factory settings. Highlight it, then press **Source/Select**. A confirmation dialog box appears. Press **Source/Select** to reset, press the right arrow button to highlight No, then press **Source/Select** if you don't want a reset.
- **Info**: This read-only window provides information on the projector's software, the number of hours the current lamp has been in use, and selected image settings. Press **Source/Select** to close this window.
- **Reset lamptimer**: This resets the lamp hour timer to zero. After replacing the lamp (page 31), highlight Reset lamptimer, press **Source/Select**, then press it again to confirm your selection. The timer in the Info window resets to zero.
- **Service Code**: This window can only be accessed by service personnel by entering a code.

Userlogo menu

This menu allows you to display a blank blue or black screen instead of the default InFocus screen when no source is detected. Highlight the desired color, press **Source/Select**, then press the left arrow to return to the previous menu.

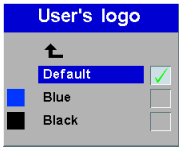


FIGURE 20

Userlogo menu

MAINTENANCE & TROUBLESHOOTING

This section describes how to:

- clean the lens
- clean the air intake dust filters
- replace the projection lamp
- replace the batteries in the remote
- use the security lock feature
- troubleshoot the projector

Cleaning the Lens

Follow these steps to clean the projection lens:

1. Apply a non-abrasive camera lens cleaner to a soft, dry cloth.
   - Avoid using an excessive amount of cleaner, and don't apply the cleaner directly to the lens.
   - Abrasive cleaners, solvents or other harsh chemicals might scratch the lens.
2. Lightly wipe the cleaning cloth over the lens in a circular motion.
3. If you don't intend to use the projector immediately, replace the lens cap.

Cleaning the Dust Filters

The dust filters catch dust and other particles in the air. If the filters become clogged, the projector does not cool properly and may malfunction.

1. Turn off the projector and unplug the power cord.
2. Turn the projector upside down and remove the screws on the filter doors.

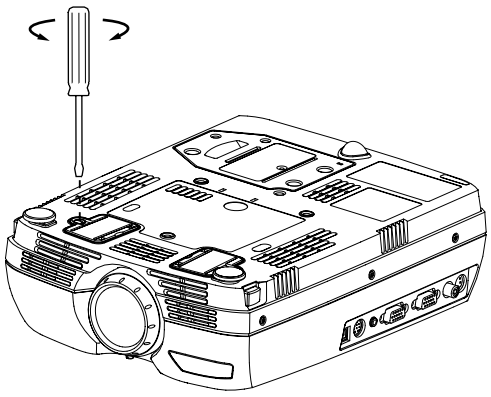


FIGURE 21

Removing the filter doors

3 Remove the filter doors and clean them using a vacuum cleaner on low power.

4 Replace the filter doors and tighten the screws.

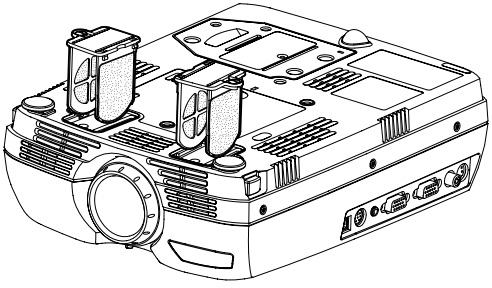


FIGURE 22

Replacing the filter doors

Replacing the Projection Lamp

The lamp hour timer in the Service Info menu counts the number of hours the lamp has been in use. When the timer reaches 2000 hours, the Alarm LED lights red, indicating that it is time to change the lamp. You can order new lamp housings from your InFocus dealer. See "Accessories" on page 40 for information.

Follow these steps to replace the projection lamp:

1. Turn off the projector and unplug the power cord.
2. Wait 60 minutes to allow the projector to cool thoroughly.
3. Loosen the three captive screws on the lamp housing.

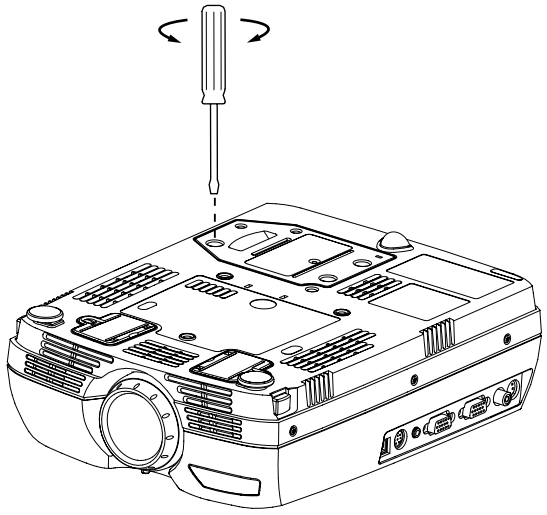


FIGURE 23

Loosening the screws on the lamp housing

4. Carefully remove the lamp housing. Dispose of the lamp in an environmentally proper manner.

WARNING: *To avoid burns, allow the projector to cool for at least 60 minutes before you replace the lamp. Never extract the lamp housing while the projector is operating.*

WARNING: *Be extremely careful when removing the lamp housing. In the unlikely event that the bulb ruptures, small glass fragments may be generated. The lamp module is designed to contain these fragments, but use caution when removing the lamp module.*

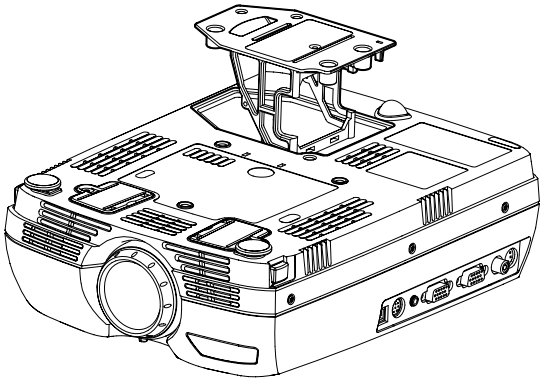


FIGURE 24

Removing the lamp housing

WARNING: *Do not drop the lamp module or touch the glass bulb! The glass may shatter and cause injury.*

5 Install the new lamp housing and tighten the screws.

6 Plug in the power cord and press the Power button to turn the projector back on.

7 To reset the lamp hour timer, navigate to the Setup/Service menu and choose Reset lamptimer. See page 27 for details on the Service menu.

Replacing the Batteries in the Remote Control

The life of the batteries depends on how often and how long you use the remote. Symptoms of low battery charge include erratic responses when using the remote and a reduced range of operation.

Follow these steps to replace the batteries:

1 Turn the remote face down in your hand.

2 Push the release tab on the battery door toward the top of the remote and lift the door off.

3 Remove the old batteries and dispose of them in an environmentally proper manner.

4 Install two new AAA alkaline batteries. Make sure you install each in the correct direction.

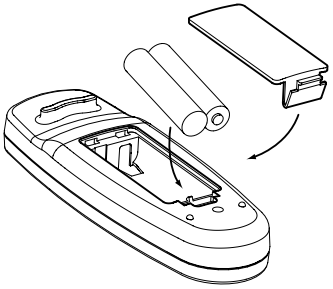


FIGURE 25

Replacing the batteries in the remote

5 Slide the two tabs on the battery door into position, press the release tab and push the door into the remote to re-install the door.

Using the Security Lock

The projector has a security connector for use with a PC Guardian Cable Lock System (Figure 26). See "Optional Accessories" on page 41 for ordering information. Refer to the information that came with the lock for instructions on how to use it to secure the projector.

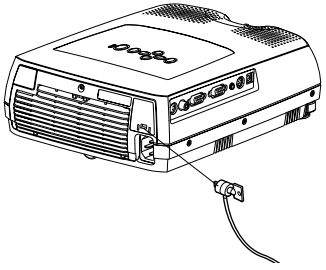


FIGURE 26

Installing the security lock

Troubleshooting

LEDs

The Alarm LED on top of the projector (Figure 11 on page 18) will alert you to certain problems.

- A solid red Alarm LED means it is time to change the lamp. See page 31.
- A blinking red Alarm LED means the projector is overheating. Turn off the projector and allow it to cool.

The other LED on top of the projector indicates the normal operating state of the projector.

- A solid green LED means the projector is on.
- A blinking green LED means the projector is in DPMS mode. See page 25.
- An blinking orange LED means the projector is going into standby mode; a solid orange LED means the projector is in standby mode. See page 14 for detail on standby mode.

Problem: The projector is not running

- Make sure that the power cord is properly connected to a functional AC electrical outlet. Make sure that the power cord is also properly connected to the projector.
- If the projector is plugged into a power strip, make sure the power strip is turned on.
- Make sure the projector is turned on. Verify that the LED is solid green.

Problem: Projector is running, but nothing appears on projection screen

- Make sure you have removed the lens cap on the projection lens at the front of the projector.
- Verify that the Black button on the remote is not activated.
- Check the projector's lamp housing to ensure that it is securely connected to the bottom case. See "Replacing the Projection Lamp" on page 31.

Problem: Only the start-up screen displays

- Verify that the cables are connected correctly. See page 9 for connection procedures.
- Make sure that the cables do not have any bent pins.
- Verify that the proper input source is connected. See "Source/ Select (keypad only) or Computer and Video (remote only)" on page 18.
- Try resetting the projector. See page 23.
- You might need to turn everything off and power up the equipment again in the proper order. Refer to your computer's documentation to determine the correct order.
- Make sure your laptop's external video port is turned on. See the "Portable and Laptop Activation Chart" on page 42 or your computer's manual for details.
- Make sure your computer's video board is installed and configured correctly.
- Make sure your computer has a compatible video board. The projector isn't CGA or EGA compatible.

If you're using Windows 98:

1. Open "My Computer" icon, the Control Panel folder and then the Display icon.
2. Click the Settings tab.
3. Verify that the Desktop area is set to 1280x1024 or less.

Problem: Color or text not being projected

- You might need to adjust the brightness up or down until the text is visible. Refer to "Brightness" on page 22 for more information.

Problem: The screen resolution is not right

- Make sure the computer's video card is set for a resolution of no greater than 1280x1024.

Problem: Image isn't centered on the screen

- Move the projector to reposition the image.
- Reposition the image using the menu. Refer to page 24.
- Be sure the projector lens is at a 90 degree angle to the screen.

Problem: Image is too wide or narrow for screen

- Adjust the zoom or projector placement.
- Adjust the width of the image. See page 24.

Problem: Image is out of focus

- Turn the projection lens to focus the image.
- Make sure the projection screen is at least 3.6 feet (1 m) from the projector, and that the projector is at a 90 degree angle to the screen.
- Check the projection lens to see if it needs cleaning.

Problem: Image and menus are reversed left to right

- Rear projection mode is probably turned on. Turn Rear off in the System menu. The image should immediately return to forward projection. See page 25.

Problem: Projected image is distorted

- Try resetting the projector. See page 23.
- Adjust the tuning of the image. See page 24.

Problem: Projected colors don't match the computer or video player's colors

- Just as there are differences in the displays of different monitors, there are often differences between the computer image and the projected image. Adjust the brightness, color and/or contrast in the Main menu. See page 22.

Problem: Lamp seems to be getting dimmer

- The lamp begins to lose brightness when it has been in use for a long time. Replace the lamp as described in "Replacing the Projection Lamp" on page 31.

Problem: Lamp shuts off

- A minor power surge may cause the lamp to shut off. Turn off the projector, wait at least a minute, then turn it back in.
- Make sure the vents on the bottom and back of the projector are not blocked.

The most current troubleshooting information can be found in the Service and Support section of our website at **http://www.infocus.com/service.** You'll also find a Technical Library, FAQs, and support contacts including a technical support e-mail form.

Before calling your dealer or InFocus Technical Support for assistance, please have the following information available:

- the projector's serial number (located on the bottom label)
- the resolution of your computer.

Call InFocus Technical Support at **1-800-799-9911** between 6 a.m. and 6 p.m. PST, Monday through Friday. Service is available in North America after hours and on weekends for a fee at 1-888-592-6800.

In Europe, call InFocus in The Netherlands at **(31) 35-6474010** between 8 a.m. and 6 p.m. Central European Time.

In Asia, call **(65) 353-9449** between 9 a.m. and 6 p.m.

Or, send us an e-mail at **techsupport@infocus.com**

APPENDIX

Specifications

The projector must be operated and stored within the temperature and humidity ranges specified.

Temperature	
Operating	41 to 95° F (5 to 35° C) at sea level 41 to 86° F (5 to 30° C) at 10,000 feet
Non-operating	-4 to 140° F (-20 to 60° C)

Altitude	
Operating	0 to 10,000 feet (3,048 meters)
Non-operating	0 to 20,000 feet (6,096 meters)??

Humidity	
Operating	20% to 80% relative humidity, non-condensing
Non-operating	10% to 90% relative humidity, non-condensing

Dimensions
3.3 x 8.5 x 11.2 inches (8.4 x 21.5 28.5 cm)

Weight
5.7 lbs. (2.6 kg) unpacked

Optics	
Focus Range	3.6 - 26.2 feet (1 - 7.8 m)

Lamp	
Type	132-watt UHP lamp

Input Power Requirements
100-240V~ 2-1A 50-60 Hz

Ceiling Mount
UL tested/listed ceiling mount with minimum capacity of 22 lbs (10kg)

Accessories

Standard Accessories (ship with the projector)	Part Number
Quick Start card	801967
User's Guide	801469
Soft Case	420074
Shipping Box (with packaging)	420071
Computer Cable 6 ft (1.8 m)	420017
Audio/Video Cable 6 ft (1.8 m)	420072
S-Video Cable 6 ft (1.8 m)	420075
PS/2 Mouse Cable	420066
USB Mouse Cable	420010
North American Power Cord (additional country-dependant power cords may be included)	300067
Remote	420070
Projection Lamp Module (included in projector)	SP-LAMP-LP2E
Lens Cap	420073
Online User's Guide CD-ROM	802412

NOTE: *Use only InFocus-approved accessories. Other products have not been tested with the projector.*

Optional Accessories

Shipping Case (ATA approved)	CA-ATA-004
Samsonite Travel Case	CA-WHL-002
Deluxe Carry Case	CA-C132
Ceiling Mount Kit	SP-CEIL-LMP2
Macintosh Adaptor	SP-MACADPT
GyroMouse RF Remote (US, Mexico, Canada, UK only)	HW-RF-GPRO
Remote Point RF Remote with LaserPointer (US, Mexico, and Canada only)	HW-RF-REMLSR
Laser Pointer	A90
Mind Path FX/2000 Remote Control	F/X2000
Mind Path Gyropoint RF	GYRO-RF
Mind Path Remote Control	IR50F/X
Mind Path Pocket Point RF	HW-RF-POCKTPNT
PC Guardian Projector Cable Lock	SP-LOCK
S-Video Cable	SP-SVIDEO
15' VGA Extension Cable	SP-VGA15
50' VGA Cable - Domestic	SP-VGA50-D
50' VGA Cable - International	SP-VGA50-I
VGA 1-in-2-out Distribution Amplifier	HW-VGA2OUT
Portable Projector Stand, table 17"x25", holds up to 125 lb	SP-STND
Deluxe Wheeled Projector and Computer Cart	HW-CART
40” Portable Projection Screen	HW-PORTSCR40
50” Portable Projection Screen	HW-PORTSCR50
60” Deluxe Insta-Theatre Screen	HW-DLXSCRN
Pull Down Screen, 84” Diagonal	HW-WALLSCR84
Replacement Projection Lamp Module	SP-LAMP-LP2E
3rd Year Extended Warranty (1 year extension)	EW-1YEAR
4th YearExtended Warranty (2 year extension)	EW-2YEAR

NOTE: *You can purchase these items by contacting your dealer or InFocus Catalog Sales at 1-800-660-0024.*

NOTE: *Visit our website at www.infocus.com for the most current activation chart. It is located in the Technical Library in the Service and Support section.*

NOTE: *Usually, pressing the key commands once activates the external video port, pressing it again activates both the external and internal ports, and pressing it a third time activates the internal port. Refer to your computer's documentation for details on your specific model.*

Portable and Laptop Activation Chart

Many laptop computers do not automatically turn on their external video port when a projector is connected. Activation commands for some laptop computers are listed in the following table. (If your computer is not listed or the given command does not work, refer to the computer's documentation for the appropriate command.) On many laptops, the activation function key is labeled with an icon, for example ⌨/🖵 or the text CRT/LCD.

Computer	Key command to activate port	Key command to de-activate port
Acer	Ctrl-Alt-Esc (for setup)	Ctrl-Alt-Esc (for setup)
AST* **	FN-D or Ctrl-D	FN-D or Ctrl-D
	Ctrl-FN-D	Ctrl-FN-D
	FN-F5	FN-F5
	type from A:/IVGA/CRT	type from A:/IVGA/CRT
	FN-F12	FN-F12
AMS	FN-F2	FN-F2
AMT	setup screen	setup screen
AT&T	FN-F3 FN-F6	FN-F3 FN-F6
Advanced Logic Research	Ctrl-Alt-V	Ctrl-Alt-V
Altima	Shift-Ctrl-Alt-C	Shift-Ctrl-Alt-L
	setup VGA/ Conf.Simulscan	setup VGA/ Conf.Simulscan
Ambra**	FN-F12	FN-F12
	FN-F5	FN-F5
	F2/Choose Option/F5	F2/Choose Option/F5
Amrel* **	setup menu	setup menu
	Shift-Ctrl-D	Shift-Ctrl-D
Apple	see Mac Portable and Mac PowerBook	
Aspen	automatic	automatic
Award	FN-F6	FN-F6
BCC*	automatic	reboot computer

Computer	Key command to activate port	Key command to de-activate port
Bondwell	LCD or CRT options after bootup	reboot for LCD or CRT options to appear
Chaplet**	setup screen	setup screen
	FN-F6	FN-F6
	FN-F4	FN-F4
Chembook	FN-F6	FN-F6
Commax	Ctrl-Alt-#6	Ctrl-Alt-#5
Compaq* **	Ctrl-Alt-<	Ctrl-Alt->
	FN-F4	FN-F4
	automatic	automatic
	mode/? (for setup option)	mode/? (for setup option)
Compuadd* **	automatic	automatic
	Alt-F for screen setup option	Alt-F for screen setup option
Data General	Ctrl-Alt-Command	Ctrl-Alt-Command
Data General Walkabout	2 CRT/X at DOS prompt	reboot
Datavue	Ctrl-Shift-M	Ctrl-Shift-M
DEC**	FN-F5	FN-F5
	FN-F4	FN-F4
Dell**	Ctrl-Alt-<	Ctrl-Alt->
	Ctrl-Alt-F10	Ctrl-Alt-F10
	FN-F8 (CRT/LCD)	FN-F8
	FN-D	FN-D
	FN-F12	FN-F12
Digital*	automatic	reboot
	FN-F2	FN-F2
Dolch	dip switch to CRT	dip switch to LCD
Epson	dip switch to CRT	dip switch to LCD
Everex*	setup screen option	setup screen option
For-A	Ctrl-Alt-Shift-C	Ctrl-Shift-Alt-L
Fujitsu	FN-F10	

Computer	Key command to activate port	Key command to de-activate port
Gateway	FN-F3 FN-F1/FN-F1 again simultaneous	FN-F3 FN-F1
Grid* **	FN-F2, choose auto or simultaneous	FN-F2
	Ctrl-Alt-Tab	Ctrl-Alt-Tab
Hitachi	FN-F7	FN-F7
Honeywell	FN-F10	FN-F10
Hyundai	setup screen option	setup screen option
IBM 970*	automatic	warm reboot
IBM ThinkPad**	reboot, enter setup menu	FN-F2
	FN-F7, select choice from setup menu	
	FN-F1, select choice	
	FN-F5, select choice	
	PS/2 SC select choice (CRT, LCD, etc.)	
Infotel	FN-F12	FN-F12
Kaypro	boot up, monitor plugged in	unplug monitor
Kris Tech	FN-F8	FN-F8
Leading Edge	FN-T	FN-T
Mac Portable 100	no video port: not compatible	
Mac PowerBook		
140, 145, 150, 170	no video port: requires a 3rd-party interface	
160, 165, 180, 520, 540, 5300	Control Panel folder, PowerBook Display folder; Activate Video Mirroring	warm reboot
210, 230, 250, 270, 280, 2300	requires Apple Docking Station or Mini Dock	
Magitronic	FN-F4	FN-F4
Mastersport	FN-F2	FN-F1

Computer	Key command to activate port	Key command to de-activate port
Micro Express*	automatic	warm reboot
Micron	FN-F2	FN-F2
Microslate*	automatic	warm reboot
Mitsubishi	SW2 On-Off-Off-Off	SW2 Off-On-On-On
NCR	setup screen option	setup screen option
NEC* **	setup screen option	setup screen option
	CRT at the DOS prompt	LCD at the DOS prompt
	FN-F3	FN-F3
Olivetti*	automatic	automatic
	FN-O/*	FN-O/*
Packard Bell* **	FN-F0	FN-F0
	Ctrl-Alt-<	Ctrl-Alt->
Panasonic	FN-F2	FN-F2
Prostar	Ctrl-Alt-S at bootup	Ctrl-Alt-S at bootup
Samsung*	setup screen option	setup screen option
Sanyo	setup screen option	setup screen option
Sharp	dip switch to CRT	dip switch to LCD
Sun SPARC-Dataview	Ctrl-Shift-M	Ctrl-Shift-M
Tandy**	Ctrl-Alt-Insert	Ctrl-Alt-Insert
	setup screen option	setup screen option
Tangent	FN-F5	FN-F5
Texas Instruments*	setup screen option	setup screen option
Top-Link* **	setup screen option	setup screen option
	FN-F6	FN-F6
Toshiba* **	Ctrl-Alt-End	Ctrl-Alt-Home
	FN-End	FN-Home
	FN-F5	FN-F5
	setup screen option	setup screen option
Twinhead*	FN-F7	FN-F7
	FN-F5	FN-F5
	Automatic	Automatic
WinBook	Ctrl-Alt-F10	Ctrl-Alt-F10

Computer	Key command to activate port	Key command to de-activate port
Wyse	software driven	software driven
Zenith**	FN-F10	FN-F10
	FN-F2	FN-F2
	FN-F1	FN-F1
Zeos**	Ctrl-Shift-D FN-F1	Ctrl-Shift-D FN-F1

* These manufacturers have models that automatically send video to the external CRT port when some type of display device is attached.

** These manufacturers offer more than one key command depending on the computer model.

Using Video Mirroring with a PowerBook Computer

When you turn video mirroring (called SimulScan in newer PowerBooks—see below) on, the projector displays the same information that appears on your PowerBook's built-in screen. When video mirroring is off, the projector acts like a separate display.

To turn on video mirroring for the first time:

1. Open the Monitors control panel; click on Monitor 2.
2. Set the number of colors you want.
3. Open the Control Strip, then click on the monitor icon.
4. Select "Turn Video Mirroring On."

Now you can turn video mirroring on and off from the Control Strip without having to open the Monitors control panel again.

When using video mirroring and high color graphics such as slide shows, the projected image occasionally might turn black and white. If this happens, perform the following steps:

1. Turn off video mirroring.
2. Open the Monitors control panel.
3. Move the white menu bar to Monitor 2 to set the projector as the primary monitor.
4. Restart the PowerBook.

Using SimulScan

Some newer PowerBooks display images on an external monitor or projector differently than previous ones. When using SimulScan, the projector displays the same information that appears on your PowerBook

To select SimulScan:

1. Open the Control Panel, then double-click Monitors and Sound.
2. In the Resolution list, choose the SimulScan mode, then click OK.
3. If this changes your display settings, a dialog box appears. Click OK to confirm the change.

Projected Image Size

NOTE: *Use the graph and table to help you determine projected image sizes.*

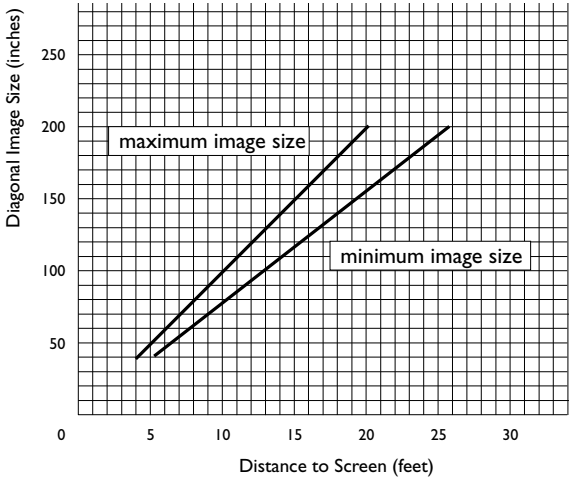


FIGURE 27

Projected image size

NOTE: *Visit our website at www.infocus.com for an interactive image size calculator. It is located in the Technical Library in the Service and Support section.*

Table 1:
Range of distance to the screen for a given screen size

		Distance to screen	
Diagonal Screen Size (inches)	**Image Width (inches)**	**Maximum distance (feet)**	**Minimum Distance (feet)**
40	32	5.1	3.9
50	40	6.4	4.9
60	48	7.7	5.9
100	80	12.8	9.8
150	120	19.2	14.8
200	160	25.6	19.7

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